



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/544,159

03/13/2006

Peter Stauss

5367-191PUS

8419

27799

7590

04/21/2009

COHEN, PONTANI, LIEBERMAN & PAVANE LLP  
551 FIFTH AVENUE  
SUITE 1210  
NEW YORK, NY 10176

EXAMINER

WEISS, HOWARD

ART UNIT

PAPER NUMBER

2814

MAIL DATE

DELIVERY MODE

04/21/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/544,159	<b>Applicant(s)</b> STAUSS ET AL.	
	<b>Examiner</b> HOWARD WEISS	<b>Art Unit</b> 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 13-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 13-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Attorney's Docket Number: 5367-191PUS

Filing Date: 3/13/2006

Continuing Data: 371 of PCT/DE04/00121 (01/27/2004); RCE established 3/20/2009

Claimed Foreign Priority Date: 01/31/2003 (DEX)

Applicant(s): Stauss et al. (Ploessl)

Examiner: Howard Weiss

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/20/2009 has been entered.

***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the metallic mirror layer arranged between the thin-film semiconductor body and the carrier, and the dielectric layer at least partially arranged between the thin-film semiconductor body and the metallic mirror layer must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several

views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claim 25 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 25 depends upon canceled Claim 11.
4. In Claims 16 to 18, "step b)" should be replaced with –step d)--.
5. In Claims 14, 15 and 26, "step c)" should be replaced with –step e)--.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 29 and 30 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear how the thin-film semiconductor body can be soldered onto the carrier if both the metallic mirror layer and the dielectric layer are arranged therebetween.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1 to 10, 13, 14 and 16 to 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (U.S. Patent No. 6,287,882), Heremans et al. (U.S. Patent No. 6,504,180) and Yonehara et al. (U.S. Patent No. 5,453,394).

Chang et al. shows most of the instant invention (e.g. Figures 4 and Column 4 lines 4 to 46) including

- an optoelectronic semiconductor component being a LED or laser LED or a thin-film luminescence diode
- soldering a multilayered TFS body **41** to a carrier **44** with gold-containing solder
- the TFS body comprising one of In AlGa<sub>N</sub>, InAsGaP or InGaAsN
- metallic mirror layer **43** located between said TFS body and the carrier

Chang et al. do not show the carrier to be made of germanium (Ge) and a dielectric layer arranged between the TFS and mirror layer. Yonehara et al. teach (Column 7

Lines 3 to 7) that Ge is an equivalent carrier material known in the art. Therefore, since these carrier materials were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to use Ge for the carrier material as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of invention. See Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*, 550 U.S. --, 82 USPQ2d 1385 (2007).

Heremans et al. teach (e.g. Figure 1b) to arrange a dielectric layer **22** at least partially between a mirror layer **23** and a thin-film semiconductor body **10,11,12** to produce a device with high radiation efficiency and reduced power consumption (Column 5 Lines 9 to 15). It would have been obvious to a person of ordinary skill in the art at the time of invention to arrange a dielectric layer at least partially between a mirror layer and a thin-film semiconductor body as taught by Heremans et al. in the device and process of Chang et al. to produce a device with high radiation efficiency and reduced power consumption.

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al, Heremans et al. and Yonehara et al. as applied to Claims 1 and 13 above, and in further view of Kelly et al. (U.S. Patent No. 6,740,604).

Chang et al, Heremans et al. and Yonehara et al. show most aspects of the instant invention (Paragraph 9) except for the use of laser irradiation to strip the TFS body from the carrier. Kelly et al. teach (e.g. Figure 7) to use laser irradiation **1** to prevent the destruction of the surface of the semiconductor layer (Column 2 Lines 60 to 67). It would have been obvious to a person of ordinary skill in the art at the time of invention to use laser irradiation as taught by Kelly et al. in the process of Chang et al, Heremans et al. and Yonehara et al. to prevent the destruction of the surface of the semiconductor layer.

11. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al, Heremans et al. and Yonehara et al. as applied to Claims 1 and 13 above, and in further view of Dautartas (U.S. Patent No. 6,902,098).

Chang et al, Heremans et al. and Yonehara et al. disclose the claimed invention (Paragraph 9) except for the explicit formation of a gold-germanium eutectic. Dautartas teaches (Figure 4 and Column 3 Lines 16 to 18) that a gold-germanium eutectic is an equivalent solder material known in the art. Because this solder material is an art-recognized equivalent known at the time of the invention was made, one of ordinary skill in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the use of said solder material would have yielded predictable results. See Supreme Court decision in *KSR International Co. v. Teleflex Inc.*, 550 U.S. \_\_\_, 82 YSPQ2d 1385 (2007).

### ***Response to Arguments***

12. Applicant's arguments with respect to Claims 1 to 10 and 13 to 30 have been considered but are moot in view of the new ground(s) of rejection. The Examiner's remarks concerning the rejection of Claim 15 from the last office action are still valid and considered repeated herein.

### ***Conclusion***

13. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the

hours of 7:00 AM to 3:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via [Howard.Weiss@uspto.gov](mailto:Howard.Weiss@uspto.gov). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on **(571) 272-1705**.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).

16. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/ 98; 438/ 455, 458, 933	thru 4/17/2009
Other Documentation: none	
Electronic Database(s): EAST	thru 4/17/2009

HW/hw  
20 April 2009

/Howard Weiss/  
Primary Examiner  
Art Unit 2814